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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,467	11/08/2001	Fang-Hvi Chan	B-4373 619285-5	4294

36716 7590 05/02/2006

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EXAMINER

LAO, LUN YI

ART UNIT PAPER NUMBER

2629

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/045,467	<b>Applicant(s)</b> CHAN ET AL.	
	<b>Examiner</b> LUN-YI LAO	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1-6 and 8-10 are objected to because of the following informalities:

The recitation of "a second electrode with a second end ... connecting with the first end" in claim 1, lines 11-12 should be changed to "a second electrode with a second end ... connecting with the **second** end".

The recitation of "fourth electrodes" in claim 10, lines 9 and 11-12 should be changed to "third electrodes" since there is no third electrodes in claim 10,

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al(6,704,803).

### **Claim 1**

Kim et al teach a liquid crystal display device comprising a first substrate(10) and a second substrate(20) facing the first substrate(10). A space for housing liquid crystal molecules(70) is formed between the first substrate(10) and the second substrate(20)(see figures 2A-2C and column 3, lines 4-19). A plurality of electrodes (30, 40) are paired and disposed on the first substrate(10)(see figure 2B and column 3, lines 4-19). Kim et al teach electrodes(30, 40) paired and being in parallel with each other(see figure 2B). Kim et al teach each pair of electrodes comprises a first electrode (30) with a first end and two symmetric first lateral sides connecting with the first end, formed on the first substrate and a second electrode (40) with a second end and two symmetric second lateral sides connecting with the second end, formed on the first substrate(10) and the first end faces the second end with a discharge gap there between(see figure 2B). When an external voltage(VC) is applied between the first and the second electrodes, an axially electrical field is generated to change the arrangement of the liquid crystal molecules(see figures 2A-2B, 3A-3B; column 3, lines 61-68 and column 4).

### **Claim 2**

Kim et al teach that the predetermined arrangement of the liquid crystal molecules is in a vertical alignment, each liquid crystal molecule has a longitudinal axis, and the longitudinal axis is substantially perpendicular to the first substrate(10)(see figures 2A, 3A and column3, lines 57-60).

### **Claim 3**

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Kim et al teach that the predetermined arrangement of the liquid crystal molecules is in a vertical alignment, each liquid crystal molecule has a longitudinal axis, and the longitudinal axis is substantially perpendicular to the second substrate(20)(see figures 2A, 3A and column3, lines 57-60).

#### **Claims 8 and 9**

Kim et al, figures 2B, 3B, show that the width or thickness of the first electrode(30) increases from the first end to the other end, and the width or thickness of the second electrode(40) increases from the second end to the other end.

#### **Claim 10**

Kim et al teach an LCD display having four electrodes disposed on the first substrate(10) at corners of each display cell(pixel)(see figures 2B, 3B)

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Kim et al(6,704,083) in view Wiltshire(5,313,562) and Kim et al(6,642,985).

**Claim 4-5**

Kim et al(6,704,083) does not specifically teach the predetermined arrangement of the liquid crystal molecules in a horizontal alignment and the longitudinal axis is perpendicular to a line formed between the first and second ends.

Wiltshire teaches an LCD display having a first electrode(9 or 11) having a first end and a second electrode(10 or 12) having a second end(see figure 1 and column 2, lines 28-65). It would have been obvious to have modified Kim et al with the teaching of Wiltshire, so as to provide a clear picture to a user the arrangement of the electrodes.

Kim et al(6,642,985) teach the predetermined arrangement of the liquid crystal molecules is in a horizontal alignment, each liquid crystal molecule has a longitudinal axis, and the longitudinal axis is substantially parallel to the first substrate(1) or second substrate(11) and perpendicular to a line formed by the first end and the second end(see figures 3-4 and column 4, lines 10-23). It would have been obvious to have modified Kim et al(6,704,083) as modified with the teaching of Kim et al(6,642,985), so as to provide an LCD display would be more productive and stable.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Kim et al(6,704,083) in view Wiltshire(5,313,562) and Kim et al(6,642,985).

**Claim 6**

Kim et al(6,704,083) does not specifically teach the first electrode is symmetrical to the second electrode along a line of axial symmetry.

Wiltshire teaches an LCD display having a first electrode(9 or 11) having a first end and a second electrode(10 or 12) having a second end(see figure 1 and column 2,

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lines 28-65) and the first electrode is symmetrical to the second electrode along a line of axial symmetry(see figure 1). It would have been obvious to have modified Kim et al with the teaching of Wiltshire, so as to provide a clear picture to a user the arrangement of the electrodes.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-6 and 8-10 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohmuro et al(6,281,956) teach an LCD display having electrodes(11a, 11a') for applying voltage to align the liquid crystal cells(see figures 5A, 5B).

Lee et al(6,215,542) teach an LCD display having first and second electrodes(41a, 41b) ) for applying voltage to align the liquid crystal cells.

Arakawa et al(6,621,550) teach an LCD having electrodes for applying voltage to align the liquid crystal cells.

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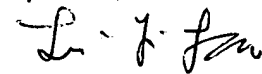
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671.

The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 26, 2006

A handwritten signature in black ink, appearing to read 'L. Y. Lao', is positioned above the printed name.

Lun-yi Lao

**Primary Examiner**